

Enhancing Wellness: Leveraging Smart Device Insights to Optimize

EXECUTIVE SUMMARY

Bellabeat, a high-tech company specializing in health-focused smart devices, is poised to leverage valuable insights from the analysis of smart device usage data. By understanding trends in physical activity and sleep patterns, Bellabeat can significantly enhance its product offerings, tailor personalized user experiences, and refine its marketing strategies.

METHODOLOGY

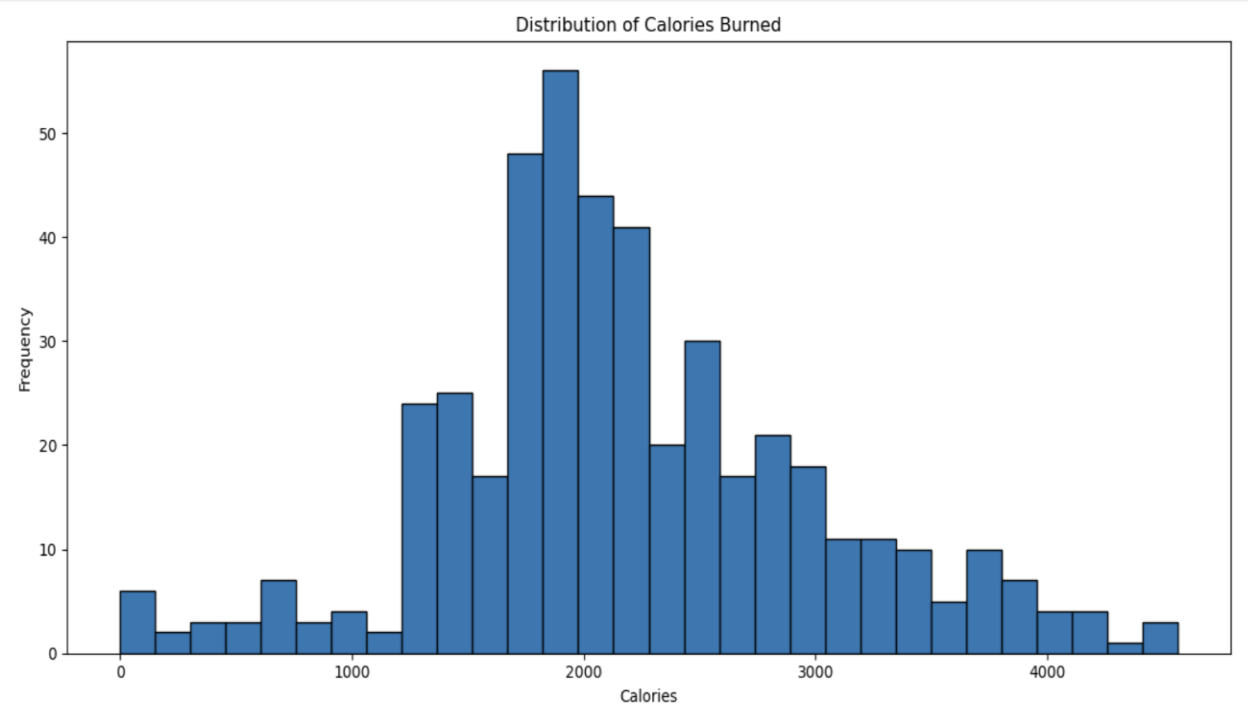
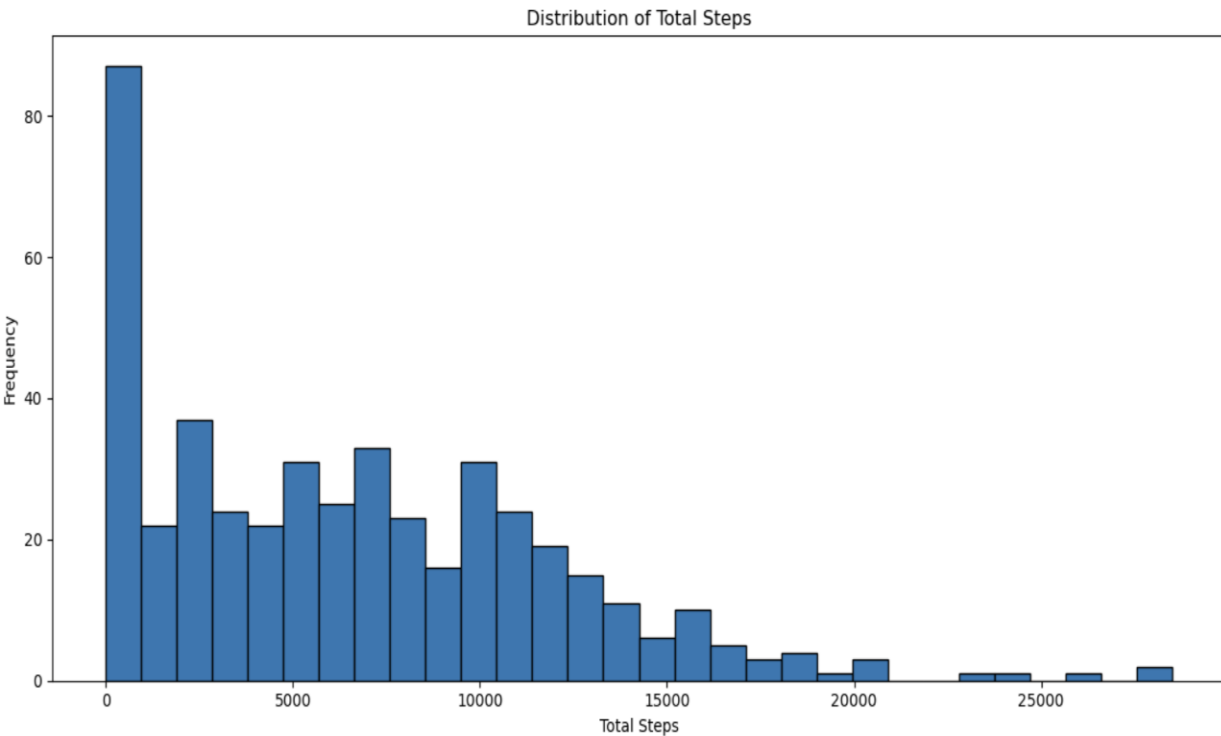
Data Collection

- **Source of Data:** The data was sourced from a comprehensive dataset comprising daily activity and sleep records from smart device users.
- **Dataset Description:**
 - + **Activity Data:** Includes metrics such as Total Steps, Calories Burned, and Very Active Minutes.
 - + **Sleep Data:** Includes metrics such as Total Minutes Asleep and Total Time in Bed.

Data Preprocessing

- **Data Loading:** The datasets were loaded into the analysis environment using Python's pandas library.
- **Date Conversion:**
 - + **Activity dates** were converted to a uniform datetime format.
 - + **Sleep dates**, which included time information, were converted to datetime and then extracted to date format for consistency.
- **Data Merging:** The activity and sleep datasets were merged based on the date to create a unified dataset for analysis.

DISTRIBUTION OF TOTAL STEPS & CALORIES BURNED



TRENDS - FINDINGS & IMPLICATIONS

Findings:

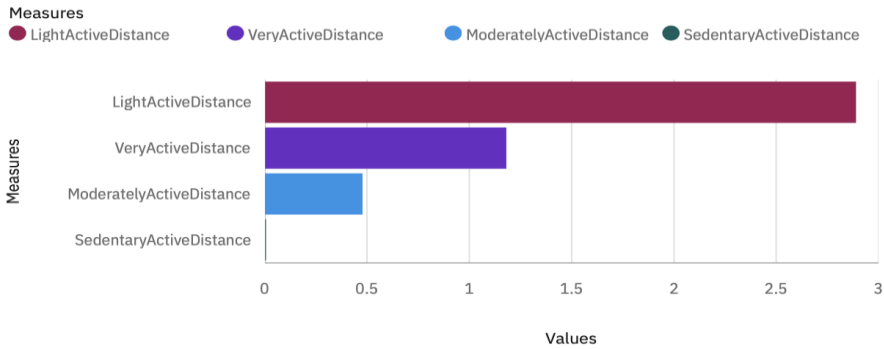
- **Total Steps Distribution:**
 - There is a high frequency of low step counts, with many users recording less than 2,500 steps.
 - The frequency gradually decreases as the step count increases, with fewer users achieving higher step counts.
 - A small number of users achieve very high step counts (above 20,000 steps).
- **Calories Burned Distribution:**
 - The calories burned distribution shows a more normal distribution compared to total steps.
 - The peak is around 2,000 calories burned, with most users burning between 1,500 and 2,500 calories.
 - There are fewer users burning very low or very high amounts of calories.

Implications:

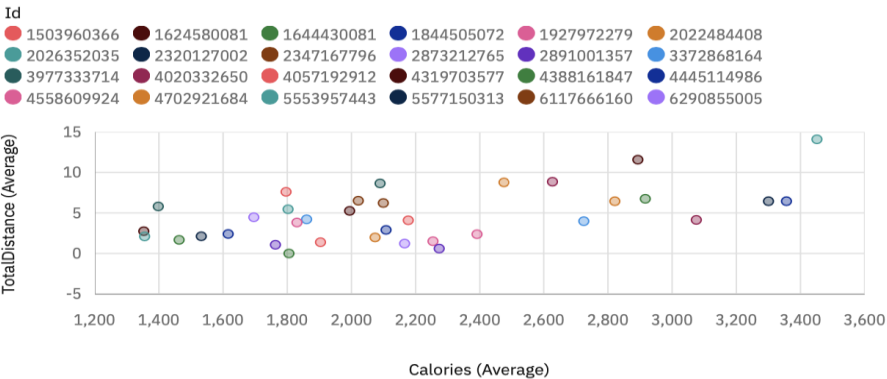
- **User Activity Levels:**
 - This suggests a potential opportunity for Bellabeat to develop features or programs to encourage and motivate users to increase their daily step counts.
- **Personalized Recommendations:**
 - For users with low step counts, Bellabeat can provide personalized activity recommendations to gradually increase their activity levels.
 - Features like daily step goals, reminders to move, and virtual challenges can help users stay motivated.
- **Marketing Strategies:**
 - Tailor marketing messages to address the common need for increased physical activity. Highlight the benefits of achieving daily step goals and how Bellabeat products can support users in this journey.
 - Use success stories and testimonials from users who have significantly increased their step counts and improved their health as part of the marketing campaign.
 - Create educational content around the importance of regular physical activity and how small changes can lead to significant health benefits.

Activity Insights

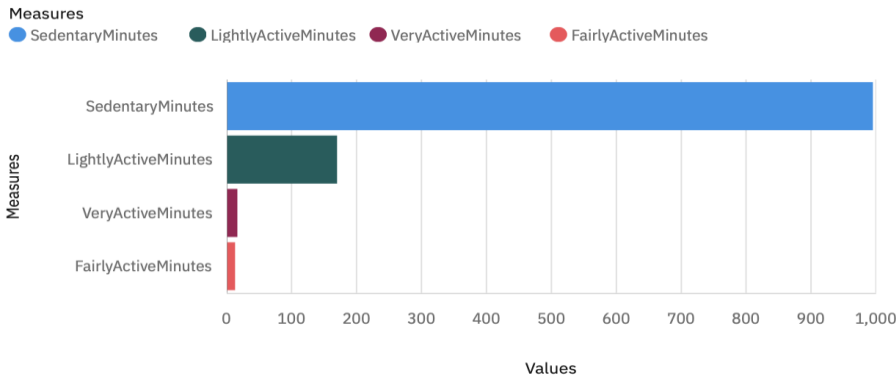
LightActiveDistance, VeryActiveDistance, ModeratelyActiveDistance, SedentaryActiveDistance



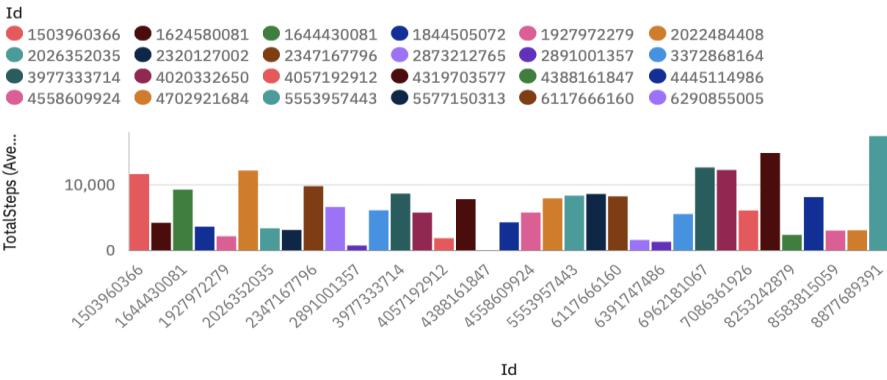
Calories by TotalDistance with points for Id



SedentaryMinutes, LightlyActiveMinutes, VeryActiveMinutes, FairlyActiveMinutes



TotalSteps by Id colored by Id



- FINDINGS & IMPLICATIONS

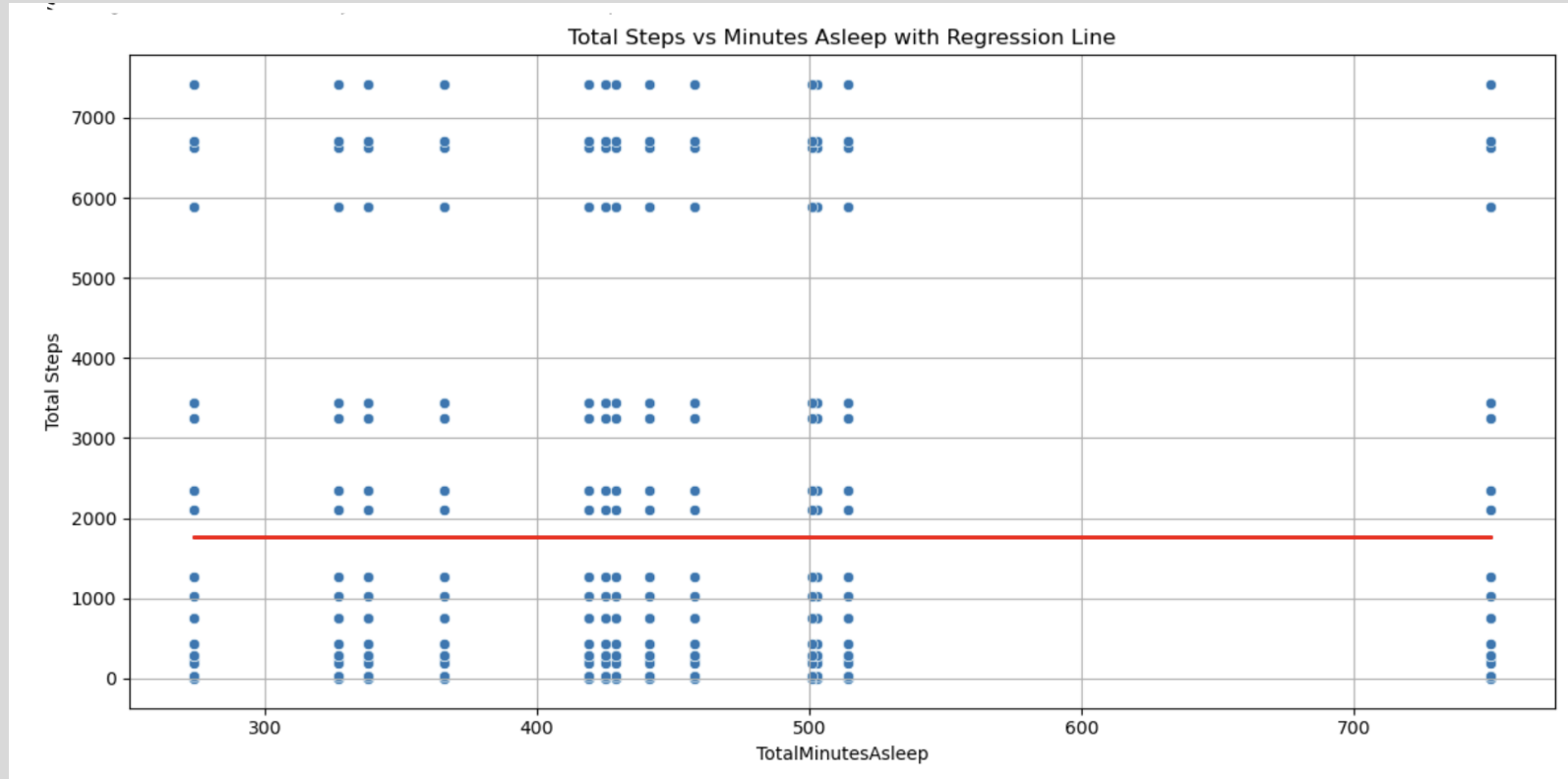
Findings

- The majority of users' activity is classified as light active distance, followed by very active distance, moderately active distance, and sedentary active distance.
- There is a positive correlation between calories burned and total distance traveled. Different users (IDs) have varying levels of total distance and corresponding calories burned.
- Users spend the most time being sedentary, followed by lightly active minutes. Very active and fairly active minutes are significantly lower.
- There is significant variability in the total steps taken by different users. Some users consistently achieve higher step counts, while others have much lower activity levels.

Implications

- Suggests that most users engage in light physical activities, with a smaller portion engaging in moderate to vigorous activities. Focus on promoting more moderate and vigorous activities to balance the activity levels.
- reinforces the importance of physical activity in calorie expenditure. Can use this insight to emphasize the benefits of increasing physical activity for calorie burn in their product features and marketing.
- substantial opportunity for Bellabeat to encourage users to reduce sedentary time and increase their active minutes, particularly focusing on fairly and very active minutes. This can be achieved through targeted notifications, reminders, and challenges.
- leverage this variability to create personalized step goals and challenges.

TOTAL STEPS COMPARED TOTAL SLEEP MINUTES



- FINDINGS & IMPLICATIONS

- Based on data, the amount of total minutes asleep doesn't have any correlation to the amount of total steps that are taken between the user.
- suggests that the amount of sleep users get does not significantly impact their daily step count. This indicates that sleep and physical activity levels may be influenced by different factors and behaviors.

CONCLUSION

The analysis reveals that smart device users tend to have low to moderate activity levels, with a significant amount of time spent in sedentary behavior. These trends present opportunities for Bellabeat to develop features and marketing strategies that encourage increased activity and promote healthier lifestyles. By leveraging personalized recommendations, targeted marketing, and community engagement, Bellabeat can help its customers achieve better health outcomes and enhance overall user satisfaction.

Innovation ideas

1. Smart Coaching and AI-driven Personalization

AI-driven Personalization: Develop a smart coaching system that leverages artificial intelligence to provide personalized fitness and wellness recommendations. The system can analyze user activity data, sleep patterns, and other health metrics to create customized plans and tips that adapt to the user's progress over time.

2. Gamification and Challenges

Interactive Challenges: Introduce gamified elements into the Bellabeat app, such as daily, weekly, or monthly challenges that encourage users to reach specific activity or health goals. Users can earn badges, rewards, and participate in leaderboards to foster a sense of achievement and competition.

3. Social Features and Community Engagement

Community-driven Goals: Create community-driven goals and challenges where users can join groups based on their interests, such as walking groups, yoga enthusiasts, or runners. This can enhance social interaction and accountability, encouraging users to stay active and engaged.

4. Integration with Other Health and Wellness Platforms

Cross-platform Integration: Allow integration with other health and wellness platforms and devices, such as nutrition tracking apps, mental health apps, and other fitness devices. This would provide a holistic view of the user's health and allow for more comprehensive recommendations.